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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,452	07/11/2003	Shelley D. Minteer	SLU 4554.1	4859
321	7590	02/05/2009		
SENNIGER POWERS LLP	EXAMINER			
100 NORTH BROADWAY	MARTIN, ANGELA J			
17TH FLOOR				
ST LOUIS, MO 63102	ART UNIT			
	1795			
NOTIFICATION DATE	DELIVERY MODE			
02/05/2009	ELECTRONIC			

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

[uspatents@senniger.com](mailto:uspatents@senniger.com)

<b>Office Action Summary</b>	<b>Application No.</b> 10/617,452	<b>Applicant(s)</b> MINTEER ET AL.
	<b>Examiner</b> ANGELA J. MARTIN	<b>Art Unit</b> 1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 30 October 2008.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-16,18-77 and 113-140 is/are pending in the application.
- 4a) Of the above claim(s) 1-5,7,9,11,27-41,45,48-77 and 113-140 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 6,8,13-16,23-26,42-44,46 and 47 is/are rejected.
- 7) Claim(s) 12 and 18-22 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No./Mail Date 11/5/08;1/28/08
- 4) Interview Summary (PTO-413)  
 Paper No./Mail Date \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

**DETAILED ACTION**

This Office Action is responsive to the Remarks filed on October 30, 2008. The claims have not been amended. Pending claims are claims 6, 8, 10, 12-16, 18-26, 42-44, 46, 47. The rejection is made final for the following reasons of record.

***Claim Objections***

1. Claims 18, 19, 20, 21, 22 are objected to because of the following informalities:  
Claims 18 and 19 are dependent on canceled claim 17; claims 20-22 are dependent on claim 19. Appropriate correction is required.

***Response to Arguments***

2. Applicant's arguments filed 10/30/08 have been fully considered but they are not persuasive.

***Claim Rejections - 35 USC § 112***

3. Applicant argues that "Applicant provides ample guidance in selection of each of the components of the claimed bioanode (e.g., electron conductors, electron mediators, electrocatalysts, enzymes, and enzyme immobilization materials) and discloses several examples of working bioanodes." However, Applicant does not provide criteria that define the components of the bioanode; for example, the definition of "one enzyme...capable of reacting with a reduced form of an electron mediator"; an "electron

conduction enzyme immobilization material...immobilizing and stabilizing the enzyme and being permeable to the oxidant." These definitions do not provide structural, physical, or chemical properties of the components. "The vice of a functional claim exists not only when a claim is 'wholly' functional, if that is ever true, but when the inventor is painstaking when he recites what has already been seen, and then uses conveniently functional language at the exact point of novelty." *General Electric Co. v. Wabash Appliance Corporation* 37 USPQ 466 US 1938 at 469. Functional language does "little more than outline goals appellants hope the recited invention achieves and the problems the invention will hopefully ameliorate." *University of California v. Eli Lilly and Co.* 43 USPQ2d 1398 (CAFC 1997) at 1406. The specification does not provide adequate description for the scope of the electron conductor, at least one enzyme, an electron conducting enzyme immobilization material. The claims encompass any enzyme immobilization material; which could include well-known unmodified PTFE and Nafion (Karyakin et al, p. 4336) (Jin et al., p. 71) or polyvinylimidazole (Gregg, col. 3, lines 55-60). A specification cannot always support expansive claim language and satisfy the requirements of 35 USC 112 "merely by clearly describing one embodiment of the thing claimed." *Lizard Tech v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 76 USPQ2d 1731, 1733 (Fed. Cir. 2005). Thus, the rejection stands for the above reasons.

***Double Patenting***

4. Applicant's arguments, see p. 4, filed 10/30/08, with respect to the obviousness-type double patenting rejection have been fully considered and are persuasive. The double patenting rejection has been withdrawn.

***Claim Rejections - 35 USC § 103***

5. Applicant argues that the "rejections do not give any patentable weight to the enzyme stabilization criteria in the pending claims (e.g., the stabilized enzyme retaining at least about 75% of its initial catalytic activity for at least 30 days while continuously reacting with the electron mediator)." However, the terminology, "at least about" is a relative term (MPEP 2173.05(b)). In determining the range encompassed by the term "about", one must consider the context of the term as it is used in the specification and claims of the application. *Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd.*, 476 F.3d 1321, 1326, 81 USPQ2d 1427, 1432 (Fed. Cir. 2007). In *<W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), the court held that a limitation defining the stretch rate of a plastic as "exceeding about 10% per second" is definite because infringement could clearly be assessed through the use of a stopwatch. However, the court held that claims reciting "at least about" were invalid for indefiniteness where there was close prior art and there was nothing in the specification, prosecution history, or the prior art to provide any indication as to what

range of specific activity is covered by the term "about." *Amgen, Inc. v. Chugai Pharmaceutical Co.*, 927 F.2d 1200, 18 USPQ2d 1016 (Fed. Cir. 1991).

***Allowable Subject Matter***

6. Claims 12, 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose nor suggest modification of the enzyme immobilization material with a hydrophobic cation larger than NH4+ as described in claim 12; claim 47 is dependent on claim 12.

***Conclusion***

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANGELA J. MARTIN whose telephone number is (571)272-1288. The examiner can normally be reached on Monday-Friday from 10:00 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AJM  
Examiner, Art Unit 1795

/PATRICK RYAN/  
Supervisory Patent Examiner, Art Unit 1795

<b>Application Number</b> 	<b>Application/Control No.</b>	<b>Applicant(s)/Patent under Reexamination</b>
	10/617,452 <b>Examiner</b> ANGELA J. MARTIN	MINTEER ET AL. <b>Art Unit</b> 1795